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NEWS 31  Apr 14  MEDLINE Reload
NEWS 32  Apr 17  Polymer searching in REGISTRY enhanced
NEWS 33  Apr 21  Indexing from 1947 to 1956 being added to records in CA/CAPLUS
NEWS 34  Apr 21  New current-awareness alert (SDI) frequency in
                 WPIDS/WPINDEX/WPIX
NEWS 35  Apr 28  RDISCLOSURE now available on STN
NEWS 36  May 05  Pharmacokinetic information and systematic chemical names
                 added to PHAR
NEWS 37  May 15  MEDLINE file segment of TOXCENTER reloaded
NEWS 38  May 15  Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 39  May 16  CHEMREACT will be removed from STN
NEWS 40  May 19  Simultaneous left and right truncation added to WSCA
NEWS 41  May 19  RAPRA enhanced with new search field, simultaneous left and
                 right truncation
NEWS 42  Jun 06  Simultaneous left and right truncation added to CBNB
NEWS 43  Jun 06  PASCAL enhanced with additional data

NEWS EXPRESS  April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
              MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
              AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
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=> s l1 and (array or microchip or chip)
L2           32 L1 AND (ARRAY OR MICROCHIP OR CHIP)

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=> s l2 not 2002-2003/py
L3           24 L2 NOT 2002-2003/PY
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=> d l3 1-24 ti au so py ab

L3 ANSWER 1 OF 24 CA COPYRIGHT 2003 ACS
TI Designing mixed-metal **supramolecular complexes**
AU Brewer, Karen Jenks; Swavey, Shawn; Williams, Rodd Lee; Fang, Zhenglai; Bullock, Elizabeth R.
SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4512(Complex Adaptive Structures), 53-64
CODEN: PSISDG; ISSN: 0277-786X
PY 2001
AB Mixed-metal supramol. complexes are of interest in that they link multiple structural components into a large supramol. **array**. Each subunit is designed to perform a simple act and those acts combine together to give rise to more complicated device functions. By variation of the nature or type of components used and their structural position within the supramol. assembly, the type of functioning of the mol. device can be controlled. Our mol. design uses transition metal polyazine light absorbers (LA) and couples them through bridging ligands (BL) to other metal centers of interest. These addnl. metals can function as bioactive sites (BAS), electron acceptors (EA) and electron collectors (EC). An overview of our work in this area will be described with a focus on how component modulation allows these systems to be applicable to a large **array** of problems of interest including multifunctional DNA binding agents and photochem. mol. devices for light energy conversion.

L3 ANSWER 2 OF 24 CA COPYRIGHT 2003 ACS
TI The first example of an anion-pyrrole complex
AU Coles, Simon J.; Gale, Philip A.; Hursthouse, Michael B.
SO CrystEngComm (2001) Paper No. 53, No pp. given, Paper No. 53
CODEN: CRECF4; ISSN: 1466-8033
URL: http://www.rsc.org/CFCart/displayarticleeonfree.cfm?article=A%2D9%223%24%5FV%3AB%214%2E%5FL9%28%3E%2CC%5B7%2D%3C5QE%5C%3C%3E%5C6%2AR%5EO5UILU%5BKG9%0A
PY 2001
AB Tetramethylammonium chloride (1) has been recrystd. from pyrrole (2) yielding a pyrrole-chloride complex (I) that has been crystallog. characterized. Complex I contains a chloride anion that is bound by hydrogen bonds from two pyrrole rings and a tetramethylammonium cation. The supramol. structure is reminiscent of a honeycomb **array**, comprised of a pyrrole-chloride framework with cavities occupied bytetramethylammonium moieties.

L3 ANSWER 3 OF 24 CA COPYRIGHT 2003 ACS
TI An infinite **supramolecular array** structure in metal dithiolate **complexes**: crystal structure of K(dibenzo-18-crown-6)[M(dmit)2](CH3CN)2(M = Ni, Au)
AU Shitagami, Kozo; Akutagawa, Tomoyuki; Hasegawa, Tatsuo; Nakamura, Takayoshi; Robertson, Neil
SO CrystEngComm (2001) Paper No. 52, No pp. given, Paper No. 52
CODEN: CRECF4; ISSN: 1466-8033
URL: http://www.rsc.org/CFCart/displayarticleeonfree.cfm?article=A%2D9%223%24%5FV%3AB%214%2E%5FL9%28%3E%2CC%5B4M%3C1S5P%3C%3E%5C6%2AQ%3EO1W9%40U%5BKG9%0A
PY 2001
AB K(dibenzo-18-crown-6)[M(dmit)2](MeCN)2 (M = Ni, Au; dmit2- = 2-thioxo-1,3-dithiole-4,5-dithiolate), which have a 1-dimensional supramol. **array**, were prepd. These salts are isomorphous (monoclinic space group C2/c) and each K+ (dibenzo-18-crown-6) supramol. cation unit is connected through the interaction of two MeCN mols. The [Ni(dmit)2]- mols. exist as isolated monomers, and the magnetic susceptibility of the salt exhibits Curie-type behavior.

L3 ANSWER 4 OF 24 CA COPYRIGHT 2003 ACS

TI A **supramolecular array** assembled via the **complementary** binding properties of ruthenium(II) and tin(IV) porphyrins
AU Maiya, Bhaskar G.; Bampos, Nick; Asok Kumar, A.; Feeder, Neil; Sanders, Jeremy K. M.
SO New Journal of Chemistry (2001), 25(6), 797-800
CODEN: NJCHE5; ISSN: 1144-0546
PY 2001
AB A new porphyrin trimer was self-assembled by employing the mutually noninterfering coordination properties of the Ru(II) and Sn(IV) centers to form a multi-metal **array**. The photo- and electro-chem. properties of this **array** are also reported.

L3 ANSWER 5 OF 24 CA COPYRIGHT 2003 ACS
TI Solid-State **Supramolecular** Structures of Resorcinol-Arylboronic Acid **Compounds**
AU Davis, Claude J.; Lewis, Patrick T.; Billodeaux, Damon R.; Fronczek, Frank R.; Escobedo, Jorge O.; Strongin, Robert M.
SO Organic Letters (2001), 3(16), 2443-2445
CODEN: ORLEF7; ISSN: 1523-7060
PY 2001
AB An x-ray crystallog. study of unique H-bonded supramol. solid-state networks comprised of a tetraarylboronic acid resorcinarene is described. When I (R = H) is recrystd. from 9:1 MeOH:EtOH, partial esterification takes place to give compd. I (R = Me), the corresponding half Me ester, which forms an infinite two-dimensional **array**. Each mol. participates in 12 H bonds with other macrocycles. These H bonds are both B-OH...OH (phenolic) and OH (phenolic)...OH (phenolic).

L3 ANSWER 6 OF 24 CA COPYRIGHT 2003 ACS
TI **Supramolecular** interactions in metal tosylate **complexes**
AU Fewings, K. R.; Junk, P. C.; Georganopoulou, D.; Prince, P. D.; Steed, J. W.
SO Polyhedron (2001), 20(7-8), 643-649
CODEN: PLYHDE; ISSN: 0277-5387
PY 2001
AB Ammonium tosylate, hydrated metal tosylates [Ca(H2O)4(p-SO3C6H4CH3)2] and [M(H2O)]6(p-SO3C6H4CH3)2 (M = Mg, Mn, Fe, Co, Ni and Zn) and [M(H2O)2(15-crown-5)](p-SO3C6H4CH3)2 (M = Mn, Co and Zn) were crystd. from aq. media and their structures detd. by x-ray crystallog. The ammonium complex is an anhyd. species with a complex H bonding **array**. The structure of the Ca complex shows the tosylate is bound directly to the Ca center through the SO3 moiety, while the remaining isomorphous complexes all have a hexahydrated metal center involved in a complex H bonded network through M-OH2.cntdot..cntdot..cntdot.O-S interactions. The crown ether contg. compds. [M(H2O)2(15-crown-5)(p-SO3C6H4CH3)2] (M = Mn, Co and Zn) have crown-encapsulated M(H2O)22+ ions with tosylate ions involved in H bonding bridging the cations in a 1-dimensional polymer.

L3 ANSWER 7 OF 24 CA COPYRIGHT 2003 ACS
TI Three-component supramolecular self-assembly based on a 5,5'-bicalix[4]arene exoditopic receptor
AU Bottino, A.; Cunsolo, F.; Piattelli, M.; Gavuzzo, E.; Neri, P.
SO Tetrahedron Letters (2000), 41(51), 10065-10069
CODEN: TELEAY; ISSN: 0040-4039
PY 2000
AB 5,5'-Bicalix[4]arene I, a ditopic host possessing two divergent cavities, crystallizes from CH2Cl2 and p-xylene to give an iterative assembly of a three-component zigzag **array**. This **array** is formed by CH-.pi. inclusion of a linear CH2Cl2.cntdot.p-xylene connector within the facing cavities of two mols. of I. Each zigzag **array** is perpendicularly interconnected to the lateral one through hydrophilic interactions of calixarene-OH groups.

L3 ANSWER 8 OF 24 CA COPYRIGHT 2003 ACS
TI Photoinduced energy-transfer in covalently and non-covalently linked **supramolecular** arrays of metal polypyridyl **complexes**
AU Ward, Michael D.
SO International Journal of Photoenergy (1999), 1(2), 121-133
CODEN: IJPNBU; ISSN: 1110-662X
PY 1999
AB Photoinduced energy-transfer has been studied between the component parts of two types of multichromophoric **array**. In the first type the components (metal polypyridyl complexes) are covalently linked by using the bridging ligand 2,2':3',2":6",2'"-quaterpyridine, which has two inequivalent bipyridyl chelating sites in close proximity. Structural, redox and photophys. studies of the complexes based on this ligand show how the properties of each metal fragment vary between the two inequivalent binding sites, and show also how efficient inter-component energy transfer can occur between components, with an example of the antenna effect being demonstrated by energy transfer from three peripheral {Re(bipy) (CO)3Cl} fragments to one central {Ru(bipy)3}2+ fragment. In the second type of supramol. **array**, the mononuclear complex component parts are held together by hydrogen-bonding between peripheral adenine, thymine, cytosine or guanine nucleobase groups. Thus a {Ru(bipy)3}2+ deriv. with a pendant cytosine group strongly assocs. in CH2Cl2 soln. with an {Os(bipy)3}2+ complex bearing a pendant guanine group, by Watson-Crick base-pair formation (Ka .apprxeq. 5000M-1), and Ru .fwdarw. Os photoinduced energy-transfer can occur across the triple hydrogen-bonded bridge. A review with 30 refs.

L3 ANSWER 9 OF 24 CA COPYRIGHT 2003 ACS
TI Dinuclear Platinum Complexes with Hydrogen-Bonding Functionality: Noncovalent Assembly of Nanoscale Cyclic Arrays
AU Gianneschi, Nathan C.; Tiekink, Edward R. T.; Rendina, Louis M.
SO Journal of the American Chemical Society (2000), 122(35), 8474-8479
CODEN: JACSAT; ISSN: 0002-7863
PY 2000
AB The prepn. and soln. behavior of a series of novel, dinuclear organoplatinum(II) complexes of nicotinic acid 3, (I), and 4, isonicotinic acid 5, and nicotinamide 6, (II) [R = 3-CO2H, 4-CO2H, 3-C(O)NH2], are reported. For 3 and 4, comprehensive 1H NMR titrn. studies demonstrate their spontaneous self-assocn. to afford discrete, hydrogen-bonded aggregates in CD2Cl2 soln. at 298 .+-. 0.1 K. For 3, the titrn. data are consistent with the formation of a nanoscale cyclic entity (3)3 which, despite the presence of bulky PPh3 ligands, is strongly favored in soln. (K3 = 1.99 .times. 104 .+-. 7.89 .times. 102 mol-2 dm6). Complex 4 aggregates to form a cyclic dimer (4)2 with K2 = 98.2 .+-. 1.1 mol-1 dm3, and complexes 5 and 6 appear to afford oligomeric (or polymeric) aggregates. The x-ray crystal structure of 6 shows the dications assoc. to form corrugated chains connected by hydrogen bonds. This work demonstrates that the noncovalent assembly of multimeric cyclic arrays with nanoscale dimensions from simple diplatinum(II) complexes is feasible in nonaq. soln.

L3 ANSWER 10 OF 24 CA COPYRIGHT 2003 ACS
TI Stepwise Assembly of Unsymmetrical **Supramolecular** Arrays Containing Porphyrins and Coordination **Compounds**
AU Alessio, Enzo; Ciani, Enrica; Iengo, Elisabetta; Kukushkin, Vadim Yu.; Marzilli, Luigi G.
SO Inorganic Chemistry (2000), 39(7), 1434-1443
CODEN: INOCAJ; ISSN: 0020-1669
PY 2000
AB The stepwise coordination of meso-4'-pyridyl/phenyl porphyrins (4'-PyPs) to different metal centers proved to be an efficient synthetic approach leading to unsym. arrays contg. porphyrins and coordination compds. The first step of this process, treatment of 4'-PyPs with a less than stoichiometric amt. of cis,fac-RuCl2(Me2SO)3(CO) (1), leads to the

selective coordination of [cis,cis,cis-RuCl2(Me2SO)2(CO)] fragments ([Ru]) to some of the peripheral 4'-N sites of the 4'-PyPs. Column sepn. afforded four partially ruthenated 4'-PyPs in pure form: 4'-cis-DPyP[Ru] (2), 4'-trans-DPyP[Ru] (3), (4'-TPyP)[Ru] (4), and (4'-TPyP)[Ru]3 (5). These compds., which have residual unbound peripheral 4'-N(py) sites (either one or three), were allowed to react with other metal centers that may belong either to a metalloporphyrin or to a coordination compd. When building blocks 2-5 were treated with [Ru(TPP)(CO)(EtOH)] (TPP = meso-tetraphenylporphyrin) in CHCl3 at room temp., axial coordination of Ru(TPP)(CO) units ((Ru)) to the available 4'-N(py) sites readily occurred, generating the following arrays contg. both perpendicular porphyrins and coordination compds.: (Ru)(.mu.-4'-cis-DPyP)[Ru], (Ru)(.mu.-4'-trans-DPyP)[Ru], (Ru)3(.mu.-4'-TPyP)[Ru], and (Ru)(.mu.-4'-TPyP)[Ru]3. Also, building blocks 2, 3, and 5 were treated with coordination compds. capable of binding two pyridylporphyrins either cis to each other (trans-RuCl2(Me2SO)4 and trans,cis,cis-RuCl2(Me2SO)2(CO)2) or trans to each other (trans-PdCl2(C6H5CN)2). Homo-(Ru) and heterobimetallic (Ru-Pd) arrays with as many as seven metal atoms (six Ru and one Pd) and two 4'-PyPs were obtained as follows: trans,cis,cis-RuCl2(Me2SO)2(4'-cis-DPyP[Ru])2, trans,cis,cis-RuCl2(Me2SO)2(4'-trans-DPyP[Ru])2, trans,cis,cis-RuCl2(CO)2(4'-cis-DPyP[Ru])2, and trans-PdCl2(4'-TPyP[Ru]3)2. All the products were thoroughly characterized by 1H NMR spectroscopy. Since the [Ru] fragment is chiral, diastereomers are formed when two or more [Ru] units are bound to a porphyrin. When two 4'-cis-DPyP[Ru] (2) units are coordinated cis to each other on the same metal center, the mutual anisotropic effect of the cis porphyrins differentiates the sulfoxide Me resonances for the two forms. These and other results indicate that the pyridyl units react independently of the presence or absence of a substituent on the other py rings. Thus, the synthetic strategy should be a general method for linking diverse metal centers through pyridylporphyrins.

L3 ANSWER 11 OF 24 CA COPYRIGHT 2003 ACS
TI Molecular recognition induced supramolecular **array** of 2-aminopyrimidine with terephthalic acid, 1,4-phenylenediacetic acid, and fumaric acid in solid state via H-bonding and .pi.-stacking interactions
AU Goswami, Shyamaprosad; Mahapatra, Ajit Kumar
SO Supramolecular Chemistry (1999), 11(1), 25-33
CODEN: SCHEER; ISSN: 1061-0278
PY 1999
AB The crystal structures of mol. complexes of 2-aminopyrimidine (2AP) with terephthalic acid (TA) (1:1; I), 1,4-phenylenediacetic acid (PDA) (1:1; II), and fumaric acid (FA) (1:1; III) were detd. Complex I is orthorhombic, space group Pnma, with a 13.0323(3), b 23.9443(1), c 3.7927(1) .ANG., Z = 4; dc = 1.466; final R = 0.0384, wR2 = 0.0939 for 1381 independent reflections. Complex II is orthorhombic, space group Pbcn with a 4.5686(1), b 15.7687(2), c 20.1621(4) .ANG.; Z = 4; dc = 1.323; final R = 0.0461, wR2 = 0.1158 for 1662 independent reflections. Complex III is monoclinic, space group P21/c with a 3.7946(2), b 19.1766(7), c 13.0641(6) .ANG.; .beta. 96.893(1).degree., Z = 4; dc = 1.486; final R = 0.0665, wR2 = 0.1626 for 2752 independent reflections. At. coordinates are given. 2AP generates supramol. assembly with PDA and FA via non-conventional weak C-H...O H bonding. Interestingly only in the case of III, proton transfer occurs to the ring N atom of 2AP from FA. A novel H-bonding motif for the control of solid-state structures was developed. The motif is based on the H bonding complementarity of dicarboxylic acids with 2AP.

L3 ANSWER 12 OF 24 CA COPYRIGHT 2003 ACS
TI **Supramolecular complexation** of polynuclear aqua ions: a crown ether adduct of a .mu.-oxo-bridged iron(III) aqua dimer
AU Junk, Peter C.; McCool, Brian J.; Moubaraki, Boujemaa; Murray, Keith S.; Spiccia, Leone
SO Angewandte Chemie, International Edition (1999), 38(15), 2224-2226

CODEN: ACIEF5; ISSN: 1433-7851
PY 1999
AB Slow evapn. of aq. Fe(NO3)3 solns. contg. 18-crown-6 (L) gave [(H2O)5Fe(.mu.-O)Fe(OH2)5](NO3)4.2L (I). I is monoclinic, space group C2/c, Z = 4, R = 0.056, Rw = 0.062. The Fe centers in the cation of I are octahedrally coordinated and the cation is stabilized by 2nd-sphere H-bonding interactions with the L mols. Addnl. H-bonding occurs between H2O ligands and nitrate, so that a zigzag polymeric **array** is formed. The magnetic susceptibility of I is typical of those obsd. from FeIII-O-FeIII complexes, indicating the lack of intermol. hydrogen-bonded exchange pathways in the crystal structure.

L3 ANSWER 13 OF 24 CA COPYRIGHT 2003 ACS
TI An intermolecular (H2O)10 cluster in a solid-state **supramolecular complex**
AU Barbour, Leonard J.; Orr, G. William; Atwood, Jerry L.
SO Nature (London) (1998), 393(6686), 671-673
CODEN: NATUAS; ISSN: 0028-0836
PY 1998
AB The prepn. and crystal structure of a self-assembled, three-dimensional supramol. complex, [Cu2L4(H2O)4](NO3)4.xH2O (L = 1,3-bis(pyridinylmethyl)benzenedicarboxamide) are reported that is stabilized by an intricate **array** of noncovalent interactions involving contributions from solvent H2O clusters, most notably a H2O decamer ((H2O)10) with an ice-like mol. arrangement. The degree of structuring that can be imposed on H2O by its surroundings and vice versa, can be profound.

L3 ANSWER 14 OF 24 CA COPYRIGHT 2003 ACS
TI Nitrosamine/2,3-Dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) Complexes and the Formation of Donor-Appended DDQ Chains in the Solid State
AU Greer, Melinda L.; Blackstock, Silas C.
SO Journal of the American Chemical Society (1997), 119(46), 11343-11344
CODEN: JACSAT; ISSN: 0002-7863
PY 1997
AB The donor-acceptor (DA) interaction between nitrosamines and 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) is described. In soln., nitrosamine/DDQ complexes show charge-transfer bands at .lambda.m 426-560 nm. Complex formation consts., Kf, are 9-50 M-1, and for N-nitroso-1,1,3,3-tetramethylisoindoline (TEMINO), DDQ complexation in CH2Cl2 has .DELTA.H.degree. -4.8(1) kcal mol-1 and .DELTA.S.degree. -12.0(4) eu. A dichroic 1:1 TEMINO, DDQ cryst. solid is isolated and its crystal structure (1) detd. Lattice 1 contains 1D DA arrays composed of TEMINO-appended DDQ strands. **Array** formation is mediated by specific TEMINO-DDQ and DDQ-DDQ assocns. which constitute new types of weak supramol. "bonding" between these functions. The distinguishing electronic and geometric features of this new DA supramol. **array** are presented.

L3 ANSWER 15 OF 24 CA COPYRIGHT 2003 ACS
TI **Supramolecular** Aggregation of Pd6Cl12, a Cluster of **Comparable** Size to a Fullerene, with Aromatic Donors and with C60
AU Olmstead, Marilyn M.; Ginwalla, Arwa S.; Noll, Bruce C.; Tinti, Dino S.; Balch, Alan L.
SO Journal of the American Chemical Society (1996), 118(33), 7737-7745
CODEN: JACSAT; ISSN: 0002-7863
PY 1996
AB Mol. solids comprised of octahedra, hexagonal plates, and truncated icosahedra result from the co-crystn. of Pd6Cl12, benzene and its methylated derivs., and C60. Solns. of bis(benzonitrile)palladium(II) dichloride in benzene deposit deep red crystals of solvate-free Pd6Cl12 (1) while solns. of bis(benzonitrile)palladium(II) dichloride in the following solvents or solns. produce binary or ternary compds. as follows: from mesitylene, Pd6Cl12.cntdot.Me3C6H3 (2); from mesitylene/benzene,

Pd6Cl12.cntdot.Me3C6H3.cntdot.0.5C6H6 (3); from durene/benzene, Pd6Cl12.cntdot.Me4C6H2 (4); from benzene/hexamethylbenzene, Pd6Cl12.cntdot.1.5Me6C6 (5); from benzene/biphenyl, Pd6Cl12.cntdot.Ph2 (6); and from benzene/fullerene C60, Pd6Cl12.cntdot.0.5C60.cntdot.1.5C6H6 (7). The geometric structures of each of these seven compds. were detd. by x-ray crystallog., and the electronic structure of Pd6Cl12 was probed with SCF-X.alpha.-SW calcns. In each cryst. compd. the structure of the Pd6Cl12 unit is virtually invariant. It consists of an octahedral **array** of six palladium atoms that are surrounded by twelve equiv. chlorine atoms in edge-bridging sites. The long face-to-face Pd.cntdot..cntdot..cntdot.Pd sepns. (4.675 .ANG. in 1) indicate that there is no direct Pd-Pd bonding in the cluster. In 1 these octahedra interact with one another through pairwise Pd.cntdot..cntdot..cntdot.Cl contacts. In 2, 3, 4, and 6, layer-like structures are found in which each Pd6Cl12 cluster makes face-to-face contact with an arene moiety on opposite PdCl4 faces and each arene makes contact with two Pd6Cl12 clusters. In these four compds., the clusters also make contact with each other through pairwise Pd.cntdot..cntdot..cntdot.Cl contacts that are like those found in 1. The structure of Pd6Cl12.cntdot.1.5Me6C6 (5) is unique in that three hexamethylbenzene mols. make face-to-face contact with orthogonal faces of the Pd6Cl12 cluster and the cluster-cluster sepns. are larger than those in 1-4 and 6. The structure of Pd6Cl12.cntdot.0.5C60.cntdot.1.5C6H6 (7) consists of a complex **array** of mol. components with face-to-face contacts between the benzene mols. and both C60 and Pd6Cl12. Pd6Cl12 itself dissolves in arom. solvents. The electronic spectra of the resulting solns. show variations that are indicative of a degree of charge transfer between the Pd6Cl12 cluster as an electron acceptor and the arene as an electron donor.

L3 ANSWER 16 OF 24 CA COPYRIGHT 2003 ACS
TI Creation of crystalline **supramolecular** arrays: a **comparison** of co-crystal formation from solution and by solid-state grinding
AU Pedireddi, V. R.; Jones, W.; Chorlton, A. P.; Docherty, R.
SO Chemical Communications (Cambridge) (1996), (8), 987-988
CODEN: CHCOFS; ISSN: 1359-7345
PY 1996
AB The importance of appropriate chem. substitution in generating co-crystals of some dinitrobenzoic acids and anthracene from soln. and by solid-state grinding is discussed. Crystallog. data are given of co-crystals formed.

L3 ANSWER 17 OF 24 CA COPYRIGHT 2003 ACS
TI Photochemical properties of mixed-metal **supramolecular complexes**
AU Molnar, Sharon M.; Jensen, Glen E.; Vogler, Lisa M.; Jones, Sumner W.; Laverman, Leroy; Bridgewater, Jon S.; Richter, Mark M.; Brewer, Karen J.
SO Journal of Photochemistry and Photobiology, A: Chemistry (1994), 80(1-3), 315-22
CODEN: JPPCEJ; ISSN: 1010-6030
PY 1994
AB The authors prepd. a series of mixed-metal trimetallic complexes of the form {[(bpy)2Ru(BL)]2MCl2}n+ (bpy = 2,2'-bipyridine; BL = 2,3-bis(2-pyridyl)pyrazine (dpp), 2,3-bis(2-pyridyl)quinoxaline (dpq) or 2,3-bis(2-pyridyl)benzoquinoxaline (dpb); M = Ir(III), Rh(III) or Os(II)). This new class of trimetallic complexes can be prepd. with a good yield, often as high as 95%, using our building block strategy. The central rhodium and iridium fragments of these trimetallics, namely [M(BL)2Cl2]+, have been shown in the author's lab. to be capable of delivering multiple electrons, "stored" on the bridging ligand .pi.* orbitals, to a substrate as they functioned as electrocatalysts for the redn. of carbon dioxide to formate. The two terminal ruthenium metals are good light absorbers designed to give rise to photochem. activity. These bichromophoric systems should be capable of absorbing two photons of light, each giving rise to a desired photochem. reaction, namely excited-state electron

transfer. Thus these systems form the basis of a mol. device for photoinitiated electron collection. The properties of these supramol. complexes have been tuned by variation in the central metal and bridging ligand. Comparison of this **array** of nine complexes is described herein.

L3 ANSWER 18 OF 24 CA COPYRIGHT 2003 ACS
TI **Supramolecular** photochemistry: antenna effect in polynuclear metal **complexes**
AU Balzani, Vincenzo; Campagna, Sebastiano; Denti, Gianfranco; Serroni, Scolastica
SO NATO ASI Series, Series C: Mathematical and Physical Sciences (1992), 376(Photoprocesses in Transition Metal Complexes, Biosystems and Other Molecules), 233-52
CODEN: NSCSDW; ISSN: 0258-2023
PY 1992
AB In both natural and artificial supramol. arrays it is quite important to channel the absorbed light energy towards a specific unit which performs (or triggers) a useful function (for example, charge sepn. in the photosynthetic reaction center. Taking transition metal complexes as building blocks, it is possible to design and synthesize artificial supramol. systems where the direction of energy migration can be predetd. The design of such systems requires a deep knowledge of the spectroscopic and excited state properties of the building blocks and clever synthetic techniques (such as the "complexes as ligands" strategy) to place the various building blocks in the appropriate sites of the supramol. **array**. 22 Refs.

L3 ANSWER 19 OF 24 MEDLINE
TI A supramolecular system for quantifying aromatic stacking interactions.
AU Adams H; Hunter C A; Lawson K R; Perkins J; Spey S E; Urch C J; Sanderson J M
SO CHEMISTRY, (2001 Nov 19) 7 (22) 4863-77.
Journal code: 9513783. ISSN: 0947-6539.
PY 2001
AB A **supramolecular complex** for investigating the thermodynamic properties of intermolecular aromatic stacking interactions has been developed. The conformation of the complex is locked in a single well-defined conformation by an **array** of H-bonding interactions that force two aromatic rings on one end of the complex into a stacked geometry. Chemical double-mutant cycles have been used to measure an anthracene-aniline interaction (+0.6 +/- 0.8 kJ mol(-1)) and a pentafluorophenyl-aniline interaction (-0.4 +/- 0.9 kJ mol(-1)) in this system. Although the interactions are very weak, the pentafluorophenyl interaction is attractive, whereas the anthracene interaction is repulsive: this is consistent with the dominance of pi-electron electrostatic interactions. The nitropyrrole subunits used to control the conformation of these complexes lead to problems of aggregation and multiple conformational equilibria. The implications for the thermodynamic analysis are examined in detail, and the double-mutant-cycle approach is found to be remarkably robust with respect to such effects, since systematic errors in individual experiments are removed in a pair-wise fashion when the cycle is constructed.

L3 ANSWER 20 OF 24 MEDLINE
TI Mechanism and role of PDZ domains in signaling complex assembly.
AU Harris B Z; Lim W A
SO JOURNAL OF CELL SCIENCE, (2001 Sep) 114 (Pt 18) 3219-31. Ref: 104
Journal code: 0052457. ISSN: 0021-9533.
PY 2001
AB PDZ domains are protein-protein recognition modules that play a central role in organizing diverse cell signaling assemblies. These domains specifically recognize short C-terminal peptide motifs, but can also recognize internal sequences that structurally mimic a terminus. PDZ

domains can therefore be used in combination to bind an **array** of target proteins or to oligomerize into branched networks. Several PDZ-domain-containing proteins play an important role in the transport, localization and assembly of **supramolecular** signaling **complexes**. Examples of such PDZ-mediated assemblies exist in Drosophila photoreceptor cells and at mammalian synapses. The predominance of PDZ domains in metazoans indicates that this highly specialized scaffolding module probably evolved in response to the increased signaling needs of multicellular organisms.

L3 ANSWER 21 OF 24 MEDLINE
TI Scandium(III) coordination polymers containing capsules based on two p-sulfonatocalix[4]arenes.
AU Webb H R; Hardie M J; Raston C L
SO CHEMISTRY, (2001 Aug 17) 7 (16) 3616-20.
Journal code: 9513783. ISSN: 0947-6539.
PY 2001
AB Reactions of sodium p-sulfonatocalix[4]arene and scandium(III) tristriflate in the presence, and absence, of [18]crown-6 give the crystalline complexes [Sc2(mu-OH)2(H2O)10][Na4(H2O)8-[calix[4]arene(SO3)4]2).13 H2O and [[Sc2(mu-OH)2(H2O)8][Sc(H2O)4]2[calix[4]-arene(SO3)4-H+]2([18]crown-6).16H2O. Both complexes involve novel coordination polymers with calixarene units linked through sodium or scandium centers and also feature capsule assemblies through to the head-to-head association of calixarenes. A linear **array** of capsules associated with an infinite chain of aquo-bridged sodium ions, and an aquated hydroxy-bridged scandium(III) dimer, [Sc2(mu-OH)2(H2O)10]4+, are found in the absence of the crown ether. In the presence of [18]crown-6 both hydrated scandium monomers and dimers bridge between calixarenes in a two-dimensional coordination network. The crown ethers reside in cavities created by two calixarenes from adjacent polymeric sheets via a variety of **supramolecular** interactions(hydrogen-bonding, shape **complementarity**), and effectively add a third dimension to the network. The extended structure of both of these polymers is highly porous, and resembles a bilayer.

L3 ANSWER 22 OF 24 MEDLINE
TI Solid-state **supramolecular** structures of resorcinol-arylboronic acid **compounds**.
AU Davis C J; Lewis P T; Billodeaux D R; Fronczek F R; Escobedo J O; Strongin R M
SO ORGANIC LETTERS, (2001 Aug 9) 3 (16) 2443-5.
Journal code: 100890393. ISSN: 1523-7060.
PY 2001
AB [structure: see text] An X-ray crystallographic study of unique hydrogen-bonded **supramolecular** solid-state networks **comprised** of a tetraarylboronic acid resorcinarene is described. When 1 is recrystallized from 9:1 MeOH:EtOH, partial esterification takes place to give compound 2, the corresponding half methyl ester, which forms an infinite two-dimensional **array**. Each molecule participates in 12 hydrogen bonds with other macrocycles. These hydrogen bonds are both B-OH- - - OH (phenolic) and OH (phenolic)- - -OH (phenolic).

L3 ANSWER 23 OF 24 MEDLINE
TI A nonerythroid isoform of protein 4.1R interacts with components of the contractile apparatus in skeletal myofibers.
AU Kontrogianni-Konstantopoulos A; Huang S C; Benz E J Jr
SO MOLECULAR BIOLOGY OF THE CELL, (2000 Nov) 11 (11) 3805-17.
Journal code: 9201390. ISSN: 1059-1524.
PY 2000
AB The approximately 80-kDa erythroid 4.1R protein is a major component of the erythrocyte cytoskeleton, where it links transmembrane proteins to the underlying spectrin/actin complexes. A diverse collection of 4.1R isoforms has been described in nonerythroid cells, ranging from

approximately 30 to approximately 210 kDa. In the current study, we identified the number and primary structure of 4.1R isoforms expressed in adult skeletal muscle and characterized the localization patterns of 4.1R message and protein. Skeletal muscle 4.1R appears to originate solely from the upstream translation initiation codon (AUG-1) residing in exon 2'. Combinations of alternatively spliced downstream exons generate an **array** of distinct 4.1R spliceoforms. Two major isoform classes of approximately 105/110 and approximately 135 kDa are present in muscle homogenates. 4.1R transcripts are distributed in highly ordered signal stripes, whereas 4.1R protein(s) decorate the sarcoplasm in transverse striations that are in register with A-bands. An approximately 105/110-kDa 4.1R isoform appears to occur in vivo in a **supramolecular complex** with major sarcomeric proteins, including myosin, alpha-actin, and alpha-tropomyosin. In vitro binding assays showed that 4.1R may interact directly with the aforementioned contractile proteins through its 10-kDa domain. All of these observations suggest a topological model whereby 4.1R may play a scaffolding role by anchoring the actomyosin myofilaments and possibly modulating their displacements during contraction/relaxation.

L3 ANSWER 24 OF 24 MEDLINE
TI Coordination of an **array** of signaling proteins through homo- and heteromeric interactions between PDZ domains and target proteins.
AU Xu X Z; Choudhury A; Li X; Montell C
SO JOURNAL OF CELL BIOLOGY, (1998 Jul 27) 142 (2) 545-55.
Journal code: 0375356. ISSN: 0021-9525.
PY 1998
AB The rapid activation and feedback regulation of many G protein signaling cascades raises the possibility that the critical signaling proteins may be tightly coupled. Previous studies show that the PDZ domain containing protein INAD, which functions in Drosophila vision, coordinates a signaling complex by binding directly to the light-sensitive ion channel, TRP, and to phospholipase C (PLC). The INAD signaling complex also includes rhodopsin, protein kinase C (PKC), and calmodulin, though it is not known whether these proteins bind to INAD. In the current work, we show that rhodopsin, calmodulin, and PKC associate with the signaling complex by direct binding to INAD. We also found that a second ion channel, TRPL, bound to INAD. Thus, most of the proteins involved directly in phototransduction appear to bind to INAD. Furthermore, we found that INAD formed homopolymers and the homomultimerization occurred through two PDZ domains. Thus, we propose that the INAD **supramolecular complex** is a higher order signaling web consisting of an extended network of INAD molecules through which a G protein-coupled cascade is tethered.

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=> d his

     (FILE 'HOME' ENTERED AT 15:11:40 ON 12 JUN 2003)

     FILE 'CA, MEDLINE' ENTERED AT 15:11:51 ON 12 JUN 2003
L1         1294 S SUPRAMOLECULAR(6W)COMP?
L2           32 S L1 AND (ARRAY OR MICROCHIP OR CHIP)
L3           24 S L2 NOT 2002-2003/PY

=> s l1 not l2
L4         1262 L1 NOT L2

=> s l4 and DNA chip
L5            0 L4 AND DNA CHIP

=> s l4 and DNA(5w)chip
L6            0 L4 AND DNA(5W) CHIP
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=> s l4 and microelectronic(5w)matrix
L7            0 L4 AND MICROELECTRONIC(5W) MATRIX

=> s l4 and descriptor(6w)array
L8            0 L4 AND DESCRIPTOR(6W) ARRAY

=> s molecu?(5w)descri?(5w)array
L9            1 MOLECU?(5W) DESCRI?(5W) ARRAY

=> d l9 ti au so py ab

L9   ANSWER 1 OF 1  CA  COPYRIGHT 2003 ACS
TI   Microelectronic molecular descriptor array
     devices, methods, procedures, and formats for combinatorial selection of
     intermolecular ligand binding structures and for drug screening
IN   Heller, Michael J.; Windhab, Norbert; Anderson, Richard R.; Ackley, Donald
     E.; Nova, Tina S.; Hoppe, Hans-Ullrich; Hamon, Christian J.
SO   PCT Int. Appl., 106 pp.
     CODEN: PIXXD2
PY   2001
     2002
     2003
AB   These inventions relate to microelectronic mol. descriptor array devices,
     methods, procedures, and formats for combinatorial selection of intermol.
     ligand binding structures and for drug screening.  More particularly,
     those devices and methods rapidly carry out higher order selectivity of
     combinatorially produced intermol. ligand binding components, supramol.
     structures and supramol. complexes by application of unique stringency
     parameters.  Preferably, the invention includes the formation of
     exponential libraries by aggregation of sublibraries through the influence
     of electronic stringency to influence formation or detection of supramol.
     structures or complexes.  In addn., this invention relates to
     microelectronic array devices, procedures, methods and formats for mol.
     recognition processes, new drug discovery, generation of new affinity
     reagents, generation of synthetic antibodies, and for immunoassays.


=> e windhab?/au
E1            3     WINDHAB N/AU
E2           30     WINDHAB NORBERT/AU
E3            0 --> WINDHAB?/AU
E4            1     WINDHABER F/AU
E5           16     WINDHABER J/AU
E6            1     WINDHABER K/AU
E7            2     WINDHABER R/AU
E8            3     WINDHABER RALF/AU
E9           17     WINDHAGEN A/AU
E10           9     WINDHAGEN ANJA/AU
E11           1     WINDHAGEN ERICH E/AU
E12          10     WINDHAGEN H/AU

=> s e1-e2
L10          33 ("WINDHAB N"/AU OR "WINDHAB NORBERT"/AU)

=> d l10 1-33 ti au so py ab

L10  ANSWER 1 OF 33  CA  COPYRIGHT 2003 ACS
TI   Sorting and immobilization system for nucleic acids using synthetic
     binding systems
IN   Schweitzer, Markus; Anderson, Richard; Fiechtner, Michael; Mueller-ibeler,
     Jochen; Raddatz, Stefan; Bruecher, Christoph; Windhab, Norbert;
     Orwick, Jill; Schneider, Eberhard; Pignot, Marc; Kienle, Stefan
SO   PCT Int. Appl., 232 pp.
     CODEN: PIXXD2
```

PY 2003
AB The present invention relates to conjugates of synthetic binding units (SBUs) and nucleic acids. The nucleic acids may be DNA, RNA, peptide nucleic acids, locked nucleic acids, nucleic acid analogs such as 2'-fluoro-DNA and 2'-O-methyl-RNA, aptamers, and aptazymes. The SBUs are pentopyranosyl nucleic acids (pDNA and pRNA) or cyclohexylnucleooligoamides (CNA). The present invention also relates to methods for sorting and immobilizing nucleic acids on support materials using such conjugates by specific mol. addressing of the nucleic acids mediated by the synthetic binding systems. Particularly, the present invention also relates to novel methods of utilizing conjugates of synthetic binding units and nucleic acids to in active electronic array systems to produce novel array constructs from the conjugates, and the use of such constructs in various nucleic acid assay formats. In addn., the present invention relates to various novel forms of such conjugates, improved methods of making solid phase synthesized conjugates, and improved methods of conjugating pre-synthesized synthetic binding units and nucleic acids. The present invention also relates to the use of conjugates of synthetic binding units and nucleic acids as substrates for various enzymic reactions, including nucleic acid amplification reactions. Thus, oligonucleotide amplification primers were conjugated to pRNA via a phosphodiester linkage or via a reaction of a terminal hydrazide with a terminal oxidized cis-diol group. These were then immobilized on electronically addressable microchips contg. complementary pRNA. The immobilized primers were used in a strand displacement amplification reaction for detection of mouse .alpha.-fetoprotein cDNA.

L10 ANSWER 2 OF 33 CA COPYRIGHT 2003 ACS
TI DNA nanotechnology: chemical copying of connectivity
AU Eckardt, Lars Henning; Naumann, Kai; Matthias Pankau, Wolf; Rein, Michael; Schweitzer, Markus; **Windhab, Norbert**; von Kiedrowski, Guenter
SO Nature (London, United Kingdom) (2002), 420(6913), 286
CODEN: NATUAS; ISSN: 0028-0836
PY 2002
AB A review. Three-dimensional DNA nanoscaffolds such as supramol. tetrahedra can self-assemble from tris-oligonucleotidyls. In these synthetic building blocks, three identical or non-identical short DNA sequences are connected by a tris-linking backbone. The connectivity information contained in these building blocks can be copied by using the rapid and robust template-directed tris-linking technique.

L10 ANSWER 3 OF 33 CA COPYRIGHT 2003 ACS
TI Rapid parallel mutation scanning of gene fragments using a microelectronic protein-DNA chip format
AU Behrensdorf, Heike A.; Pignot, Marc; **Windhab, Norbert**; Kappel, Andreas
SO Nucleic Acids Research (2002), 30(14), e64/1-e64/6
CODEN: NARHAD; ISSN: 0305-1048
PY 2002
AB We have developed a method for the de novo discovery of genetic variations, including single nucleotide polymorphisms and mutations, on microelectronic chip devices. The method combines the features of electronically controlled DNA hybridization on open-format microarrays, with mutation detection by a fluorescence-labeled mismatch-binding protein. Electronic addressing of DNA strands to distinct test sites of the chip allows parallel anal. of several individuals, as demonstrated for mutations in different exons of the p53 gene. This microelectronic chip-based mutation discovery assay may substitute for time-consuming sequencing studies and will complement existing technologies in genomic research.

L10 ANSWER 4 OF 33 CA COPYRIGHT 2003 ACS
TI Network for evaluating data obtained in a biochip measurement device
IN Abraham-fuchs, Klaus; Hengerer, Arne; Gallahue, Kieran T.; Gosch, Greg;

O'Connell, James P.; **Windhab, Norbert**
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
PY 2002
AB In a method and a network for evaluating medical data in a clin. study, biochips contg. patient samples with multiple biomol. markers are tested in a no. of point of care test devices resp. at point of care sites. Each test of each biochip sample produces a diagnostic result, which is entered into the electronic patient record for the patient who produced the sample. A follow-up examn. is subsequently conducted for each patient, and the results of the follow-up examn. are also entered into that patient's electronic patient record. The follow-up results indicate whether the diagnostic test result was a false pos., a false neg. or correct. The follow-up data and the original diagnostic results from all point of care sites are electronically transmitted to a remote server, which has access to an expert system which uses the test results and the follow-up data to automatically devise a measurement protocol for a selected pathol.

L10 ANSWER 5 OF 33 CA COPYRIGHT 2003 ACS
TI Network for evaluating data obtained in a biochip measurement device
IN Abraham-Fuchs, Klaus; Hengerer, Arne; **Windhab, Norbert**; Gallahue, Kieran; O'Conell, James P.; Gosch, Greg
SO U.S. Pat. Appl. Publ., 5 pp.
CODEN: USXXCO
PY 2002
2003
AB The invention concerns a network and a method for evaluating medical data with a disposable biochip which contains a patient sample with multiple biomol. markers, as well as a biochip identifier which characterizes the biochip. The biochip is inserted into a point of care test device, which reads the biochip identifier. The point of care test device is in communication with a remote server, and transmits the data characterizing the biochip to the remote server. The remote server has access to a data bank in which a large no. of measurement protocols are stored, and selects one of the measurement protocols for testing the sample based on the transmitted data characterizing the biochip. The measurement protocol is transmitted back to the point of care test device via the data link, and the test device conducts testing of the sample using the measurement protocol. The test results are evaluated in an expert system, and a diagnostic result is displayed at the point of care test device. Because the measurement protocols are stored at the remote server, the point of care test device is relieved of responsibility for administration of updates of existing protocols and the addn. of new protocols. Diagrams describing the assembly and operation are given.

L10 ANSWER 6 OF 33 CA COPYRIGHT 2003 ACS
TI Synthetic derivatives of DNA-binding peptides for use in the therapeutic regulation of gene expression
IN Kappel, Andreas; **Windhab, Norbert**; Wagner, Thomas; Kienle, Stefan; Kuhn, Karsten
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
PY 2002
2002
2002
2002
2003
AB Peptides derived from known DNA-binding domains that can be relatively easily synthesized are described for use in the therapeutic regulation of gene expression. The peptides may be synthesized by std. chemistries, or genes encoding them may be delivered to target cells. The invention also relates to a method for discovering and providing specifically DNA-binding peptide domains, and to biomorph factors derived therefrom, in particular,

transcription factors and repressors. Methods of identifying essential DNA-binding peptides are described. Cells carrying a mutation in an essential gene and carrying a copy of the essential gene under control of a promoter of interest are constructed. These cells are transformed with an expression library for an array of peptides coupled with a transcription activation domain. Cells are plated on a selective medium and clones growing under selective conditions are isolated and characterized. Use of the method to identify homologs of the DNA binding domain of transcription factor E2F is demonstrated. The selection system used the HIS3 gene as selectable marker.

L10 ANSWER 7 OF 33 CA COPYRIGHT 2003 ACS
TI Method for detecting mutations and their effects upon mRNA levels using array hybridization and heteroduplex-binding reagents
IN Kappel, Andreas; Polakowski, Thomas; Pignot, Marc; **Windhab, Norbert**; Behrensdorf, Heike; Muth, Jochen
SO PCT Int. Appl., 145 pp.
CODEN: PIXXD2
PY 2002
2003
2002
2002
2003
AB The invention relates to a method for simultaneously detecting mutations in different nucleotide sequences and for detg. the transcription rate of mutated and non-mutated nucleotide sequences. RNA or cDNA samples are hybridized to an array of probes, such as a DNA microarray. Intensity of signal can give the relative transcript level and hence the transcription rate. Mutation can be detected by incubation with a heteroduplex-specific binding factor, such as a single strand-specific nuclease or a single-stranded DNA-binding protein such as mutS. The factor may be labeled, e.g. with a suitable dye. The use of the mutS protein of Escherichia coli or Thermus aquaticus is demonstrated. The proteins were manufd. in useful quantities as fusion proteins with maltose-binding protein. Use of Cy3-labeled mutS protein to detect base mismatches is demonstrated in reconstruction expts. Optimization expts. are also reported.

L10 ANSWER 8 OF 33 CA COPYRIGHT 2003 ACS
TI Drug screening method using mass spectrometry and binding profile recognition
IN Kienle, Stefan; **Windhab, Norbert**; Bruecher, Christoph; Kuhn, Karsten
SO PCT Int. Appl., 13 pp.
CODEN: PIXXD2
PY 2002
2002
AB The invention concerns the screening of substance libraries composed of drug candidates using therapeutic targets that are derived from active binding sites; known agonist/antagonists are included into the screening process; the binding is detected by mass spectrometry that can be preceded by chromatog. sepn. Comparison of binding properties is performed by binding pattern recognition; cluster anal. is applied. The combinatorial libraries are composed of carboxylic acids, amines, heterocyclic compds., lipids, alkaloids, saccharides, peptides, proteins, antibodies, etc.

L10 ANSWER 9 OF 33 CA COPYRIGHT 2003 ACS
TI Methods, procedures, and formats for using microelectronic array devices to perform multiplex immunoassay analyses
IN **Windhab, Norbert**; Heller, Michael J.; Anderson, Richard R.; Fiechtner, Michael D.; Nova, Tina S.; Schweitzer, Markus; Sundquist, Alfred R.; Brucher, Christoph; Orwick, Jill M.; Muller, Jochen; Raddatz, Stefan; Ackley, Donald E.; Hamon, Christian
SO U.S. Pat. Appl. Publ., 38 pp., Cont.-in-part of U.S. Ser. No. 374,338.

CODEN: USXXCO
PY 2001
2002
AB This invention relates to devices and methods for carrying out multi-step and multiplex immunoaffinity binding reactions in microscopic formats. In particular, these devices and methods allow the user to rapidly carry out multiple immunoassays in the same sample vol., and to rapidly resolve the results of those immunoassays in an electronically assisted format. The assays may be further multiplexed in that several samples may be analyzed and visualized on the same microelectronic array. In addn., the methods and procedures of the invention allow the use of electronic stringency to further improve the specificity and accuracy of the immunoassays on the microelectronic array devices. Complementary pyranosyl-RNA (p-RNA) constructs were used as pairing component members for a protein conjugate consisting of streptavidin linked to a goat antihuman IgG F(ab')2 antibody. P-RNA No. 81 was used to provide a capture sequence for p-RNA No. 80 by binding the biotin of p-RNA No. 81 to streptavidin-agarose in the permeation layer of a test site in an active electronic matrix array. The biotin of p-RNA No. 80 was then used to bind to a streptavidin-goat antihuman IgG F(ab')2 antibody conjugate. The goat antihuman F(ab')2 antibody-p-RNA complex was used to capture its specific antigen target, a human IgG.

L10 ANSWER 10 OF 33 CA COPYRIGHT 2003 ACS
TI Method and device for detecting molecules by means of impedance spectroscopy
IN Escher, Claus; **Windhab, Norbert**; Muth, Jochen
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
PY 2001
2001
2002
2003
AB A method for detecting target structures is characterized in that a three-dimensional porous support consisting of a non-conducting material is provided with a soln. contg. mols. to be detected and the extent to which the support is charged with these mols. is then detd. by measuring elec. impedance. The invention also relates to a device for detecting target structures by means of impedance measurement. This device consists of a chip with a layered structure contg. at least one layer that contains electrodes which can be switched in relation to each other, and the porous support consists of the non-conducting material, which is placed on and(or) under this layer. Thus, oligonucleotides may be used with a nylon membrane support.

L10 ANSWER 11 OF 33 CA COPYRIGHT 2003 ACS
TI Oligonucleotides or other biomolecules having multiple attachment moieties for binding to a substrate surface for the preparation of microarrays
IN Schweitzer, Markus; **Windhab, Norbert**; Havens, John R.; Onofrey, Thomas J.; Greef, Charles H.; Wang, Daguang
SO PCT Int. Appl., 90 pp.
CODEN: PIXXD2
PY 2001
2002
2002
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2002
2003
AB Biomols. are provided having multiple binding sites for attachment to a substrate surface. The multiple attachment sites may be produced directly on the biomol. or through use of branched phosphoramidite moieties that can be added in multiple to form dendritic structures which can in turn provide attachment sites for substrate binding moieties. Substrate binding moieties may include noncovalent binding moieties. For covalent

binding moieties, oligonucleotides contg. hydrazides and their synthetic protocols are provided. These hydrazides can be introduced via protected building blocks such as phosphoramidites or via building blocks contg. precursor forms of such hydrazides.

L10 ANSWER 12 OF 33 CA COPYRIGHT 2003 ACS
TI Electron donor/acceptor-linked, electrode-immobilized double-stranded nucleic acid probes for analysis/detection of nucleic acid-binding/modifying substances
IN Muth, Jochen; **Windhab, Norbert**
SO PCT Int. Appl., 57 pp.
CODEN: PIXXD2
PY 2001
2001
2001
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2002
2003
AB The invention relates to double-strand nucleic acid probes attached to electrodes and use thereof for rapid and easy detection of interactions between double-stranded nucleic acids and factors which interact with them, e.g., nucleic acids, transcription factors, enzymes, nucleic acid-binding/intercalating/modifying compds. The double-stranded DNA, double-stranded RNA, or RNA-DNA hybrids are addnl. attached to electron donors or electron acceptors, such as PQQ or ferrocene. Interaction of the nucleic acid-interacting factors and the probes modifies the electron flow. The invention further relates to the prodn. of said double-strand nucleic acids.

L10 ANSWER 13 OF 33 CA COPYRIGHT 2003 ACS
TI Microelectronic molecular descriptor array devices, methods, procedures, and formats for combinatorial selection of intermolecular ligand binding structures and for drug screening
IN Heller, Michael J.; **Windhab, Norbert**; Anderson, Richard R.; Ackley, Donald E.; Nova, Tina S.; Hoppe, Hans-Ullrich; Hamon, Christian J.
SO PCT Int. Appl., 106 pp.
CODEN: PIXXD2
PY 2001
2002
2003
AB These inventions relate to microelectronic mol. descriptor array devices, methods, procedures, and formats for combinatorial selection of intermol. ligand binding structures and for drug screening. More particularly, those devices and methods rapidly carry out higher order selectivity of combinatorially produced intermol. ligand binding components, supramol. structures and supramol. complexes by application of unique stringency parameters. Preferably, the invention includes the formation of exponential libraries by aggregation of sublibraries through the influence of electronic stringency to influence formation or detection of supramol. structures or complexes. In addn., this invention relates to microelectronic array devices, procedures, methods and formats for mol. recognition processes, new drug discovery, generation of new affinity reagents, generation of synthetic antibodies, and for immunoassays.

L10 ANSWER 14 OF 33 CA COPYRIGHT 2003 ACS
TI Test system for the detection of at least two markers in a sample using the hybridization and complexation with labeled probes
IN Wagner, Thomas; **Windhab, Norbert**
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
PY 2000
2001
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2001
2002

AB The invention concerns the recognition and detection of at least two markers in a biol. or clin. sample that involves several complexation steps, e.g. the hybridization of a first probe with the first marker, the binding of a second probe with the first marker and a second marker etc.; the probes are labeled; as a result of the complex formations, signals are produced and detected. Markers are e.g. disease related nucleotides; probes are nucleotides, antibodies, antigenes labeled with biotin, fluorescent dye, etc.; detection methods are e.g. fluorescent assays, immunoassays. Probes can be immobilized to a solid support. Thus a 57-mer oligonucleotide marker was incubated with a Texas-Red labeled oligonucleotide probe and a biotin labeled oligonucleotide in hybridization buffer. This was followed by incubation with streptavidin-anti-human IgG F(ab')2 and fluorescein-IgG F(ab')2 conjugates. The formed complex was detected as a yellow band on a non-denaturing electrophoresis gel.

L10 ANSWER 15 OF 33 CA COPYRIGHT 2003 ACS
TI Preparation and use of 3'-deoxypentopyranosyl-nucleosides
IN Miculka, Christian; Wagner, Thomas; **Windhab, Norbert**
SO Ger. Offen., 18 pp.
CODEN: GWXXBX
PY 2000
2000
2000
2000
2003
2001
2002

AB Title compds. [(I); Base = (un)protected (un)substituted natural or unnatural nucleic acid base group; R = H, Br, Cl, OR1; R1 = H, linking group, phosphoramidite, phosphinate; R2 = H, protecting group, or phosphate-bridged 2'.fwdarw.4' I, with similar or different Base], with D- or L-erythro or -threo configurations, were prepd., for use as therapeutic agents or electronic solid-phase diagnostic units (no data) or for conjugate formation with biomols. such as peptides, antibodies, or nucleic acids (no data). Thus, 1,2-O-isopropylidene-5-O-trityl-.alpha.-D-xylo-furanose is 3'-deoxygenated, 5'-detritylated, the .alpha.-furan form transformed to the 1,2,4-tri-O-benzoyl-protected-.alpha.-pyran using trifluoroacetic acid ion-exchange technique (25% yield), and reacted with a nucleic acid base to give, e.g., I (Base = thymine; R, R2 = COPh), which can be further reacted to give the 3'-deoxy-4'-O(4,4'-dimethoxytrityl)-2'-O-(2-cyanoethyl-N,N-diisopropyl)-phosphoramidite compd. suitable for use in normal nucleic acid chem.

L10 ANSWER 16 OF 33 CA COPYRIGHT 2003 ACS
TI Photodetector and use of the same
IN **Windhab, Norbert**; Hoppe, Hans-ulrich; Lupo, Donald
SO PCT Int. Appl., 78 pp.
CODEN: PIXXD2
PY 1999
1999
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2000
2002

AB App. for detecting and detg. the intensity of electromagnetic radiation is described which comprises a photoactive layer consisting of a (preferably nanocryst.) semiconductor with a band gap of >2.5 eV; a dye which is applied to the semiconductor; a charge transfer layer contg. a

hole-conducting material. The semiconductor may be a metal oxide, preferably a titanium oxide contg. material. The dye may be a metal complex, esp. a complex of Ru, Rh, or Os. The hole-conducting material preferably comprises .gtoreq.1 spiro compd., particularly a deriv. of 9,9'-spirobifluorene. Use of the devices for the detection of electromagnetic radiation, preferably visible radiation, is also described. The devices may be employed for analyses using the detection of fluorescence, phosphorescence, changes in absorption, scintillation, and chemiluminescence. The detectors may also be used for detection or detn. of specific materials or properties (e.g., temp., pressure, pH, or redox potential). Selective chem. anal. systems using the detectors in conjunction with a mol. detection system which can be read using electromagnetic radiation, and a light source as appropriate, are also described for application to environmental, biomol., or diagnostic anal. (esp. immunodiagnostic, genetic, or combinatorial anal. systems) are also described. App. for writing and reading out data is decribed which employs an array of the detectors. Methods for fabricating the detectors entail sequential formation of the layers.

L10 ANSWER 17 OF 33 CA COPYRIGHT 2003 ACS
TI Pyranosyl-RNA supramolecules containing non-hydrogen-bonding base-pairs
AU Hamon, Christian; Brandstetter, Tilmann; **Windhab, Norbert**
SO Synlett (1999), (Spec.), 940-944
CODEN: SYNLES; ISSN: 0936-5214
PY 1999
AB Synthesis and properties of a pyranosyl-RNA nucleoside using tryptamine as nucleobase is reported. Incorporation of this unit into oligomers using std. phosphoamidite chem. yielded self-complementary and non-selfcomplementary oligonucleotide pairs. Thermal melting expts. of these examples showed the sequence-dependent stabilizing characteristics of the incorporated base in the sym. pairing constitution with a std. Tm near that of a similar A-T-pair as well as pairing selectivity with respect to non-sym. pairing tolerating thymine, but destabilizing if confronted to an adenine as complementary base in the antiparallel strand.

L10 ANSWER 18 OF 33 CA COPYRIGHT 2003 ACS
TI Method for producing cyclohexyl and heterocyclyl nucleoside derivs. and oligomers and their use in pairing or testing systems
IN Miculka, Christian; **Windhab, Norbert**; Eschenmoser, Albert; Scherer, Stefan; Quinkert, Gerhard
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
PY 1999
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AB The invention relates to a compd. of formula (I), wherein R1 is NR3R4, OR3 or SR3 with R3 and R4 being H or CnH2n+1 independently of each other and being the same or different, n being a whole no. from 1 to 12; R2 is equal to CmH2m-C(X)-Y with X being =O, =S or =N, Y being equal to OR3, NR3R4 or SR3, R3 and R4 having the same meaning given above, and m being a whole no. from 1 to 4; or R2 is equal to CmH2m-Z-Y' with Z being a sulfonyl, phosphonyl, ether or amine group, Y' being equal to H, CnH2n+1, OR3, NR3R4 or SR3 then Z is sulfonyl or phosphonyl group, n, R3 and R4 having the meaning given above, and Y' being equal to CnH2n+1 when Z is an ether or an amine group; A, B, and D are the same or different and mean CR5R6, O, NR7 or S independently of each other with R5, R6 and R7 being H or CnH2n+1, independently of each other, n having the meaning given above; and C is equal to CR8 or N with R8 having the meaning of R5 independently,

A-B, B-C or C-D not being two identical hetero-atoms; and nucleobase means thymine, uracil, adenine, cytosine, guanine, iso-cytosine, iso-guanine, xanthine or hypoxanthine. The invention also relates to a method for producing these derivs. and to their use in pairing and/or testing systems. These compds. are of interest because they form the building units of cyclohexylnucleooligoamides (CNAs), which have the ability to base-pair with natural DNAs or RNAs, without the steric considerations posed by the ribo- or deoxy-ribo-furan rings of natural (deoxy)nucleic acids. Thus, (S,S,S)-2-iodo-8-aza[3.3.1]nonan-7-one was reacted with 3-(benzyloxy)methyl-thymine, to yield, after a series of protection/deprotection steps, I [A, B, D = CH2; C = (S)-CH; Nucleobase = thymine; R1 = (S)-BOC-NH; R2 = (S)-CH2CO2H (II)]. Using II and the adenine-base equiv., CNAs up to hexamers were synthesized using solid-phase techniques, and their self-complimentary base-pairing strength was measured.

L10 ANSWER 19 OF 33 CA COPYRIGHT 2003 ACS
TI Method for the detection and isolation of biomolecules via molecular recognition using immobilized pyranosyl nucleotide supramolecular structures
IN **Windhab, Norbert**; Miculka, Christian; Hoppe, Hans-Ullrich
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
PY 1999
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AB The invention concerns biosensors for the detection of mols. that are composed of an array of immobilized supramol. structures that have non-covalent binding sites for the receptor mols.; the receptor mols. are selected in a manner that they recognize the target mols. and they are labeled; the receptors recognize the target mols. immunol.; the receptor mol. with the captured target is hybridized to the immobilized array of the biosensor. The hybridized complex can be detected by the sensor in various ways, e.g. by fluorescence, change in electrode potential etc. Changing thermodn. parameters, e.g. concn., temp., the hybridized receptor-target complex can be removed from the surface and used in further procedures. The immobilized binding mols. are nucleic acid derivs. that differ from those in biol. samples; e.g. pyranosyl nucleotides, and pyranosyl RNAs; the immobilized binding mols. can hybridize several types of receptor mols. The receptor mols. are chosen from chem. libraries, peptide libraries; several receptor mols. that recognize different parts of the target mols. are used; the recognizing peptide/protein part of the receptor is bound via linkers to the hybridizing part. The method can be used in combination with biochip techniques for drug screening, pesticide and herbicide research, for anal. and prodn. of catalysts.

L10 ANSWER 20 OF 33 CA COPYRIGHT 2003 ACS
TI Preparation of pentopyranosyl-nucleosides for use as RNA- or DNA-pentopyranosyl-RNA conjugate links
IN Miculka, Christian; **Windhab, Norbert**; Brandstetter, Tilmann; Scherer, Stefan
SO Ger. Offen., 28 pp.
CODEN: GWXXBX
PY 1999
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AB Title compds. [(I, II); Base = (un)protected, (deaza)-purine or -pyrimidine; R = H, OH, Br, Cl; R1, R2 = (independently) H, protecting group], useful as linking groups between pentopyranosyl RNAs (p-RNA) and ribo-furanosyl RNA or DNA chains, were synthesized. Thus, pentopyranosyl-indole linker III was prepd. in six steps, starting from N-phthalimidotryptamine and D-ribose. III could be used as a linking group between a chain of p-RNA and ribo-furanosyl RNA or DNA chains (no data).

L10 ANSWER 21 OF 33 CA COPYRIGHT 2003 ACS
TI Preparation and use of pentopyranosyl-nucleosides
IN Miculka, Christian; **Windhab, Norbert**; Brandstetter, Tilmann; Burdinski, Gerhard
SO Ger. Offen., 40 pp.
CODEN: GWXXBX
PY 1999
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AB Title compds. [(I); Base = (un)protected, (deaza)-purine or -pyrimidine; R = H, OH, Br, Cl; R1, R2 = (independently) H, protecting group], useful as non-interfering RNA/DNA supports for screening, were synthesized. Thus, N6-benzoyl-9-(2',3',4'-tri-O-benzoyl .beta.-D-ribo-pyranosyl)-adenine was N,O-deprotected, N-dibenzoylated, 2'-O-benzoylated, 4'-dimethoxytritylated, and then 2'->3'-benzoyl-shifted to give p(entopyranosyl)-RNA-A-H I [stereo = .beta.-D-ribo; Base = N6,N6-di-benzoyl-adenine; R = OH; R1 = COPh; R2 = DMT(II)]. II was used to synthesize the p-RNA-(A8)-H octamer, which was then condensed with 5'-H-dGATTC-H-3' to give 5'-H-dGATTC-(3'.fwdarw.4')-p-RNA-(A8)-H-2'.

L10 ANSWER 22 OF 33 CA COPYRIGHT 2003 ACS
TI Preparation and uses of non-helical supramolecular nanosystems based on pyranosyl-nucleotides
IN Eschenmoser, Albert; Miculka, Christian; **Windhab, Norbert**; Hoppe, Hans-Ulrich
SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2
PY 1998
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AB The invention relates to a supramol. nanosystem contg. at least one substantially non-helical oligomer (oligomer A) and one or more identical or different, substantially non-helical oligomers which do not pair with each other, with identical or different functional units (oligomer B), in which the oligomer A can pair specifically non-covalently, and oligomer B is determinable by its monomers. In this system, the normal furano-sugars are replaced by pyrano-sugars. Such a system, by virtue of its ability to bind metal atoms on one or both oligomers, could form the basis of a nano-machine. The system also allows for prepn. of combinatorial libraries of sequences useful in screening tests.

L10 ANSWER 23 OF 33 CA COPYRIGHT 2003 ACS
TI High-vacuum method and device for simultaneous screening of large number of catalytic samples and microsamples
IN **Windhab, Norbert**; Miculka, Christian; Hoppe, Hans-Ulich
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
PY 1998
1998
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AB A method for simultaneous screening of a large no. of catalyst samples and microsamples consists of one or more high-vacuum chambers into which a solid is introduced that has a compd. or material ("educt") that desorbs from the solid support and enters the sample holding area. This desorbed educt then reacts with the catalyst samples, and the reaction products can be analyzed in a mass spectrometer (esp. a time-of-flight mass spectrometer).

L10 ANSWER 24 OF 33 CA COPYRIGHT 2003 ACS
TI Process and facility for examining chemical reactions in miniaturized reactors arranged parallel to each other
IN **Windhab, Norbert**; Miculka, Christian; Hoppe, Hans-Ulrich
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
PY 1998
1998
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AB A facility and app. are described for monitoring of chem. test reactions in miniaturized reactors in parallel, in which the reactors can be analyzed with respect to the nature and degree of reaction and formation of products. The process, which involves reactors provided with inlet pipes and bypasses, and has reactors with vols. 0.001-1 cm3, is esp. useful for screening of potential catalysts and reactions under virtually identical and reproducible conditions and with a relatively low amt. of substance and samples, at low cost. The method also has application in combinatorial chem.

L10 ANSWER 25 OF 33 CA COPYRIGHT 2003 ACS

TI Preparation and use of a novel substance library bound to cyclohexylnucleooligoamide backbones and supramolecular complexes produced therewith
IN Miculka, Christian; **Windhab, Norbert**; Quinkert, Gerhard; Eschenmoser, Albert
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
PY 1997
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AB The invention relates to a substance library, a process for the prodn. thereof, a process for the prodn. of supramol. complexes using said substance library, the use of said supramol. complexes produced using the substance library, and the use of the substance library itself. Uses claimed include use as medications, as plant protective materials, as catalysts, or as diagnostic material in treating illness. Thus, a cyclohexylnucleooligoamide (CNA) pentamer AATAT was synthesized, and coupled with amino acids to form a dipeptide library X-Lys-CNA(AATAT), where X = Ala, Asp, Leu, Lys, or Ser.

L10 ANSWER 26 OF 33 CA COPYRIGHT 2003 ACS
TI Chemistry of pyranosyl-RNA. Part 6. Chemistry of .alpha.-aminonitriles. Part 21. Pyranosyl-RNA also forms hairpin structures
AU Micura, Ronald; Bolli, Martin; **Windhab, Norbert**; Eschenmoser, Albert
SO Angewandte Chemie, International Edition in English (1997), 36(8), 870-873
CODEN: ACIEAY; ISSN: 0570-0833
PY 1997
AB A review, with 22 refs., on pyranosyl-RNA formation of hairpin structures.

L10 ANSWER 27 OF 33 CA COPYRIGHT 2003 ACS
TI p-RNA. 3. Chemistry of .alpha.-aminonitriles. 18. Pyranosyl-RNA: base pairing between homochiral oligonucleotide strands of opposite sense of chirality
AU Krishnamurthy, Ramanarayanan; Pitsch, Stefan; Minton, Mark; Miculka, Christian; **Windhab, Norbert**; Eschenmoser, Albert
SO Angewandte Chemie, International Edition in English (1996), 35(13/14), 1537-1541
CODEN: ACIEAY; ISSN: 0570-0833
PY 1996
AB The authors report here pyranosyl-RNA: base pairing between homochiral oligonucleotide strands of opposite sense of chirality.

L10 ANSWER 28 OF 33 CA COPYRIGHT 2003 ACS
TI Novel three-atom 2'-5' linkages in antisense nucleotides: synthesis and pairing properties of dinucleotides with a carboxylic ester linkage
AU Noe, Christian R.; **Windhab, Norbert**; Haberhauer, Georg
SO Archiv der Pharmazie (Weinheim, Germany) (1995), 328(11-12), 743-4
CODEN: ARPMAS; ISSN: 0365-6233
PY 1995
AB Synthesis and pairing properties of dinucleotides, e.g. I (A = adenine), and their binding affinity to poly U are reported.

L10 ANSWER 29 OF 33 CA COPYRIGHT 2003 ACS
TI Thermodynamic parameters of cooperative helix-to-coil transitions from synthetic A-U-rich oligoribonucleotides up to fourteen base pairs
AU **Windhab, N.**; Ohms, J.; Ackermann, T.
SO Biophysical Chemistry (1993), 47(3), 225-32

CODEN: BICIAZ; ISSN: 0301-4622
PY 1993
AB Heat induced helix-to-coil transitions are studied in the form of UV-hypochromicity profiles by absorbance spectroscopy, and .DELTA.Cp-curves by differential scanning calorimetry of self-complementary ribonucleotides. The results are analyzed and compared. Van't Hoff transition enthalpies derived by UV-expts. incorporating concn. variations are found to differ from six-parameter and two-parameter Marquardt-fits on the melting profiles. A measure for the max. no. of nucleotides in intermediate states is obtained from a statistical deconvolution. It yields a range from 12.5% for the shortest nucleotide up to 31.5% for r(UA)7. Model independent calorimetric data are reported. A limit for intra-mol. loop-formation preference is reached by rG(UA)6C within this sequence.

L10 ANSWER 30 OF 33 MEDLINE
TI DNA nanotechnology: Chemical copying of connectivity.
AU Eckardt Lars Henning; Naumann Kai; Pankau Wolf Matthias; Rein Michael; Schweitzer Markus; **Windhab Norbert**; von Kiedrowski Gunter
SO NATURE, (2002 Nov 21) 420 (6913) 286.
Journal code: 0410462. ISSN: 0028-0836.
PY 2002

L10 ANSWER 31 OF 33 MEDLINE
TI Rapid parallel mutation scanning of gene fragments using a microelectronic protein-DNA chip format.
AU Behrensdorf Heike A; Pignot Marc; **Windhab Norbert**; Kappel Andreas
SO NUCLEIC ACIDS RESEARCH, (2002 Jul 15) 30 (14) e64.
Journal code: 0411011. ISSN: 1362-4962.
PY 2002
AB We have developed a method for the de novo discovery of genetic variations, including single nucleotide polymorphisms and mutations, on microelectronic chip devices. The method combines the features of electronically controlled DNA hybridisation on open-format microarrays, with mutation detection by a fluorescence-labelled mismatch- binding protein. Electronic addressing of DNA strands to distinct test sites of the chip allows parallel analysis of several individuals, as demonstrated for mutations in different exons of the p53 gene. This microelectronic chip-based mutation discovery assay may substitute for time-consuming sequencing studies and will complement existing technologies in genomic research.

L10 ANSWER 32 OF 33 MEDLINE
TI Novel three-atom 2'-5' linkages in antisense nucleotides: synthesis and pairing properties of dinucleotides with a carboxylic ester linkage.
AU Noe C R; **Windhab N**; Haberhauer G
SO ARCHIV DER PHARMAZIE, (1995 Dec) 328 (11-12) 743-4.
Journal code: 0330167. ISSN: 0365-6233.
PY 1995

L10 ANSWER 33 OF 33 MEDLINE
TI Thermodynamic parameters of cooperative helix-to-coil transitions from synthetic A-U-rich oligoribonucleotides up to fourteen basepairs.
AU **Windhab N**; Ohms J; Ackermann T
SO BIOPHYSICAL CHEMISTRY, (1993 Oct) 47 (3) 225-32.
Journal code: 0403171. ISSN: 0301-4622.
PY 1993
AB Heat induced helix-to-coil transitions are studied in the form of ultraviolet-hypochromicity profiles by absorbance spectroscopy, and delta Cp-curves by differential scanning calorimetry of self-complementary ribonucleotides. The results are analyzed and compared. Van 't Hoff transition enthalpies derived by UV-experiments incorporating concentration variations are found to differ from six-parameter and

two-parameter Marquardt-fits on the melting profiles. A measure for the maximum number of nucleotides in intermediate states is obtained from a statistical deconvolution. It yields a range from 12.5% for the shortest nucleotide up to 31.5% for r(UA)7. Model independent calorimetric data are reported. A limit for intra-molecular loop-formation preference is reached by rG(UA)6C within this sequence.